

WHAT IS CLAIMED IS:

1. A balanced plug valve, comprising:
a valve body defining a flow passage between an inlet and an outlet thereof;
a valve seat;
a balanced plug linearly movable relative to the valve seat for regulating a flow of fluid through the flow passage, the balanced plug having a first end exposed to fluid pressure from the inlet and a sealing end configured to expose a pressure balancing surface to the fluid pressure from the inlet when in sealing engagement with the valve seat.
2. The balanced plug valve of claim 1, wherein the sealing end of the balanced plug comprises a sealing contact point at an outer most edge of a perimeter wall thereof, and wherein the pressure balancing surface is defined between the sealing contact point and an inner most edge of the perimeter wall.
3. The balanced plug valve of claim 2, wherein the sealing end of the balanced plug further comprises a shoulder land surface.
4. The balanced plug valve of claim 3, wherein the shoulder land surface is defined between the sealing contact point and the pressure balancing surface.
5. The balanced plug valve of claim 3, wherein the shoulder land surface is defined between the inner most edge of the perimeter wall and the pressure balancing surface.
6. The balanced plug valve of claim 3, wherein the valve seat comprises a secondary sealing surface, the shoulder land surface of the balanced plug sealingly engaging the secondary sealing surface upon loss of sealing engagement between the sealing contact point and the valve seat.
7. The balanced plug valve of claim 1, wherein the valve seat comprises groove formed therein, further comprising a seal positioned within the groove.

8. The balanced plug valve of claim 7, wherein the groove terminates in a wrap wall portion, and wherein the wrap wall portion is rolled to retain the seal within the groove.

9. The balanced plug valve of claim 7, wherein the seal is an o-ring seal.

10. The balanced plug valve of claim 1, wherein the valve seat includes a contoured wall configured to regulate, in association with a position of the balanced plug, a flow of fluid through the flow passage.

11. The balanced plug valve of claim 10, wherein the contoured wall comprises a v-shaped configuration.

12. The balanced plug valve of claim 1, further comprising a second valve seat, and wherein the valve body further comprises a second inlet forming a three-way valve, the balanced plug being linearly movable relative to the second valve seat for regulating a flow of fluid through the flow passage, the first end being exposed to fluid pressure from the inlet and the sealing end configured to expose the pressure balancing surface to the fluid pressure from the inlet when the balanced plug is in sealing engagement with the valve seat, and the first end being exposed to fluid pressure from the second inlet and the sealing end configured to expose the pressure balancing surface to the fluid pressure from the second inlet when the balanced plug is in sealing engagement with the second valve seat.

13. The balanced plug valve of claim 1, wherein the balanced plug is generally cylindrical in shape.

14. A balanced globe valve, comprising:
a valve body defining a flow passage between at least a first inlet and an outlet thereof;
at least one valve seat fixably positioned within the valve body;
a balanced plug linearly movable within the valve body relative to the at least one valve seat for regulating a flow of fluid between at least the first inlet and the outlet, the

balanced plug having a generally cylindrical perimeter wall terminating in a first end and a second end, each of the first end and the second end configured to expose a surface thereof to fluid pressure from the same one of the at least one inlet and the outlet such that the fluid pressure on the perimeter wall in a direction tending to impede linear movement of the balanced plug is balanced by fluid pressure on the perimeter wall in a direction tending to aid linear movement of the balanced plug.

15. The balanced globe valve of claim 14, wherein the valve body further includes a second inlet, the flow passage being defined between the first inlet, the second inlet, and the outlet, the valve further comprising a second valve seat fixably positioned within the valve body and linearly displaced from the first valve seat such that a relative flow of fluid from the first inlet and from the second inlet to the outlet is regulated by a relative position of the balanced plug to the first and the second valve seats.

16. The balanced globe valve of claim 15, wherein the first end and the second end of the perimeter wall are configured to expose the surfaces to fluid pressure from the first inlet when the balanced plug is in sealing engagement with the first valve seat, and to fluid pressure from the second inlet when the balanced plug is in sealing engagement with the second valve seat.

17. The balanced globe valve of claim 14, wherein at least one of the first end and the second end comprises a sealing contact point at an outer most edge of the perimeter wall, and wherein the surface is defined between the sealing contact point and an inner most edge of the perimeter wall.

18. The balanced globe valve of claim 17, wherein the at least one of the first end and the second end further comprises a shoulder defined between the sealing contact point and the surface.

19. The balanced globe valve of claim 18, wherein the at least one valve seat further defines a secondary sealing surface operable in relation to the shoulder to provide a sealing engagement therewith.

20. In a balanced globe valve having a valve body defining a flow passage between at least a first inlet and an outlet thereof and at least one valve seat fixably positioned within the valve body, a balanced plug linearly movable within the valve body relative to the at least one valve seat for regulating a flow of fluid between at least the first inlet and the outlet, comprising:

a generally cylindrical perimeter wall terminating in a first end and a second end, each of the first end and the second end configured to expose a pressure balancing surface thereof to fluid pressure from the same one of the at least one inlet and the outlet such that the fluid pressure on the perimeter wall in a direction tending to impede linear movement of the balanced plug is balanced by fluid pressure on the perimeter wall in a direction tending to aid linear movement of the balanced plug when one of the first end and the second end is in sealing engagement with the valve seat.